

Chapter 5

Sustainability Issues at the Neighbourhood Scale



Abstract We previously identified that urban brownfield regeneration projects are relevant strategies to limit urban sprawl while revitalizing portions of cities, namely mixed-use neighbourhoods. Moreover, these neighbourhoods in transition are opportunities to foster the implementation of sustainability objectives within European metropolitan areas. This chapter explore this subject by deepening the sustainability issues at the neighbourhood scale. To provide the basis for discussion, we first attempt to frame the urban sustainability concept and to explain how the neighbourhood scale is a means of action for cities. Then, we analyse the different sustainability issues according to a wide variety of parameters that must especially be taken into account during sustainable neighbourhood projects, and more precisely urban brownfield regeneration projects. These parameters cover the four pillars of sustainability—the environment, society, economy, and governance—and the polycentric reorganization of European metropolitan areas.

Keywords Urban sustainability · Neighbourhood scale · Sustainable neighbourhoods · Transition dynamics · Environmental balance · Sociocultural quality · Economic efficiency · Governance

5.1 Sustainability and Europe’s Changing Urban Territories

The sustainable city has now for decades been the dominant paradigm of urban development (Whitehead 2003). According to ideologies and discourses, sustainable urban planning as a holistic approach is a unique opportunity to create dynamic cities that respect both the population and the environment (Rogers and Gumuchdjian 1998) as well as mitigate climate change (IPCC et al. 2018). But in practice, striving concretely towards the sustainable city is a subject in perpetual construction (UN 2015; iiSBE 2020), which requires concerted efforts with research. According to K. Williams, we can identify two challenges for the sustainable city: the first challenge is that of a vision (do we know what the sustainable city is?) and the second challenge is that of change (do we know how to make and support the sustainable city?) (Williams 2010). Following these considerations, we concentrate in this chapter on the vision

challenge by focusing on the changing urban territories of European metropolitan areas, marked by the post-industrial era.

In fact, the European population being highly urbanized, mainly in small to medium-sized cities of less than 250,000 inhabitants, these territories do face the challenges of sustainability (Carter 2016). In general, their more-or-less organized growth model is responsible for irrational soil consumption: urban sprawl, sector-by-sector urban approach, deindustrialization, increased urbanization, etc. This model's many negative repercussions on the environment (pollution linked to transport, degradation of ecosystems, etc.), the economy (infrastructure costs, increased energy costs, etc.), and society (social segregation, inadequate services and equipment, etc.) have been well proven (Newman and Kenworthy 1999; EEA and OFEV 2016). Consequently, a critical reading of the urban evolution of these territories allows us to frame the concept of urban sustainability. This understanding of the concept is confronted with the neighbourhood scale as a means of action. This focus will allow the identification of specific sustainability issues later on, notably for urban brownfield regeneration projects.

5.2 Framing the Concept of Urban Sustainability

The concept of sustainable development has its origins in the determination provided by the Brundtland report in 1987 (BRUNTLAND 1987).¹ In 1992, at the Earth Summit in Rio de Janeiro, the concept evolved towards a search for balance between preserving the environment, social justice, and economic progress: namely the three pillars of sustainability (UNCED 1992). These three dimensions now have consensus support and sustainable development has acquired legal and political legitimacy. Reinforced through the 2030 Agenda's 17 Sustainable Development Goals (SDGs), it remains, however, a concept with no real *modus operandi*, notably when juxtaposed with the built environment such as in Goal 11, "Sustainable cities and communities" (SDSN and IEEP 2019).

Since the milestones laid down by the Aalborg Charter in 1994, updated by the New Urban Agenda in 2016, cities have emerged as key players in sustainable urban development. Within these cities, the concept of urban sustainability is mentioned in many political objectives but remains complex and hardly tangible. The adoption of a unique definition of urban sustainability is rare and often disputed. This is mostly explained by the great number of actors—from practitioners to urban thinkers—involved in the making of the city. Each field (engineering, social sciences, urban planning, architecture, etc.) prefers an adaptation of the concept representing the most essential elements, a kind of ideal from their own perspective of what the sustainable city could be (Bithas and Christofakis 2006; Tanguay et al. 2010). In the words of S. Guy and S. Marvin, "none of these definitions represents a global

¹ "Development that meets the needs of the present without compromising the ability of future generations to meet their own needs".

portrait—although some claim it—since each is only part of a complex whole which is the city”. Far from being a problem, it is important to continue to develop this multitude of definitions, which opens the dialogue on the kind of future that we can create. This role can be assumed, *inter alia*, by research (Guy and Marvin 1999).

In accordance with the latter, the definition advanced here of urban sustainability is adjusted to the context and challenges of the changing territories of European metropolitan areas, marked by post-industrialisation. In that sense, it does not pretend to be universal. In order to keep a certain consistency with major discourses, our definition is first anchored on the consensus around the three pillars of sustainability and enriched by a fourth pillar, that relates together to transition dynamics. Secondly, by linking sustainability to the built environment, it relates to the polycentric restructuring of built territories, which introduces the neighbourhood scale.

5.2.1 Sustainability as Transition Dynamics: The Four Pillars

To contribute to the discourse on the sustainable city, we rely first on the commonly accepted concept that is the search for balance between the three pillars of sustainable development (Elkington 1997), also known as the “triple bottom line” (People, Planet and Profit/Prosperity) (UN 2002). Figure 5.1 below shows objectives linked to this search for balance in the context of urban projects, which notably underlies the ecological management of resources, decarbonation of urban systems, and proactive anticipation of societal changes.

Even though the conceptual approach to sustainable development makes it possible to formulate clear objectives, from an operational point of view, it seems impossible to reach only “win–win–win” solutions that are systematically the most ecological, the most interesting at the sociocultural level, and the most economically advantageous (Rey 2006; Voituriez 2013).² More likely, the definition of sustainability for European urban territories is made up of trade-offs between the three dimensions. Nevertheless, these trade-offs must maintain and strengthen natural and human capital, an idea underpinned by strong sustainability (Allen 1980), as well as consider temporal and territorial scales (Andres 2013; Mallet and Zanetti 2015).

Making these trade-offs can be a complex task for the stakeholders involved in the future of a sustainable city. In response to this, the three-pillar concept is, nowadays, enriched by adding a fourth pillar, governance, which provides, in a way, the means to realize these trade-offs (Yigitcanlar and Kamruzzaman 2015). This transversal pillar refers to all means deployed to identify and integrate sustainability objectives in a project process to increase their success by aiming to improve overall quality (Tanguy et al. 2020). Governance considerations serve as a link between short and

² The theory refers to this complex challenge as “wicked problems”, which are confronted by interdependencies, uncertainties, circularities, and conflicting effort to find a solution (Rittel and Webber 1973; Rowe 1987; Lazarus 2009).

long-term preoccupations as well as between local and global scales (Sharifi and Murayama 2013). This supports the idea that the concept of urban sustainability is not an end in itself, but a means embodied in transition dynamics.

In that respect, it is also interesting to mention the 4P approach, which strongly focuses on practice and reflects on what the fourth pillar of sustainability may entail (Van Dorst and Duijvestein 2004). First, the approach is linked to the 3P of the concept of the triple bottom line (People, Planet, and Profit/Prosperity). To these is added a fourth P, which refers to Project and Process. The P-Project represents the spatial qualities, which are the result of the integration of sustainability aspects in relation to the specific features of a site. The P-Process refers to the interactions between the different actors and institutions to carry out the project. Here too, the 4P approach emphasizes the transition dynamics towards holistic sustainable development: not only must the 3P be taken into consideration, but also the context and the particularities of each project in a given territory as well as the decision-making process related to environmental, economic, and social aspects (who is in charge?

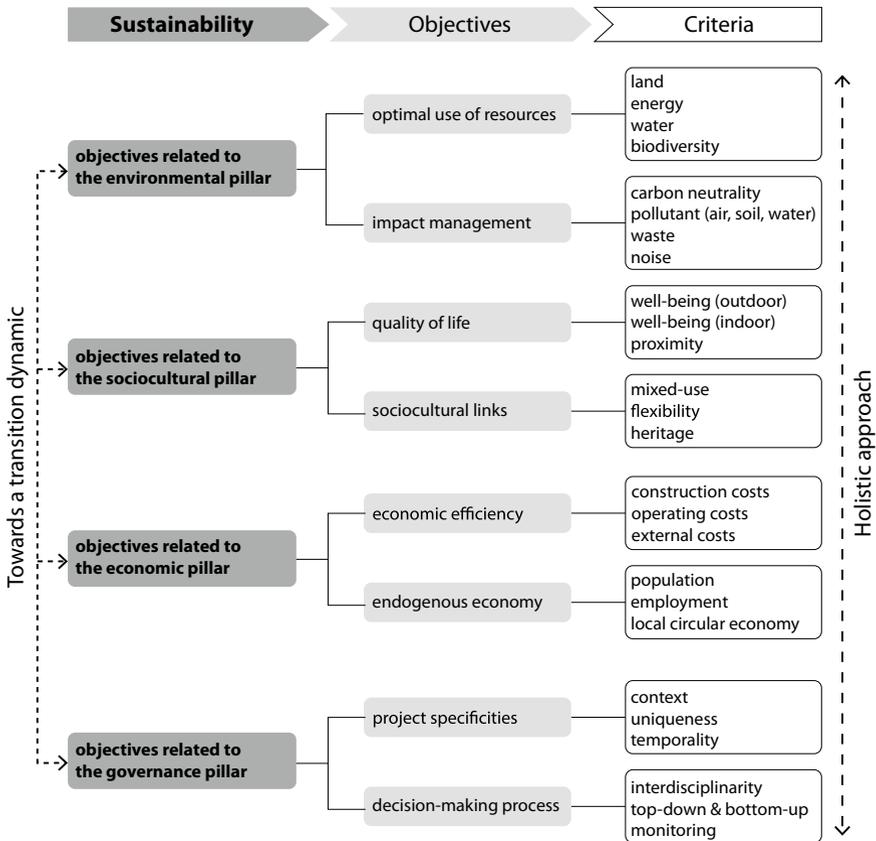


Fig. 5.1 The four pillars of sustainability in relation to the urban project

how? and when?) (Norrman et al. 2015). Essentially, it stresses the importance of governance as the fourth pillar of sustainability. On the basis of the above, we refer again to Fig. 5.1 showing governance objectives and criteria in the context of urban projects.

5.2.2 The Polycentric Restructuration of Built Territories

In his book “Cities for a Small Planet”, R. Rogers argues that the sustainable city is a compact and polycentric city that protects the countryside, targets and integrates communities within the neighbourhoods (poles), and maximizes proximity (Rogers and Gumuchdjian 1998). Already introduced in Chap. 3, the compact and polycentric city model adapted to the metropolitan area represents a relevant strategy to address the shortcomings of land-use planning for European metropolises.

This model comes from the compact city densification model, which supports the idea of inward urbanization or, in other words, building the city within the city. Yet, densification must be understood as a “necessary but not sufficient condition” to approach sustainable urban development (Jenks 1998; Burton 2000). Hence, going from a unipolar point of view to a more nuanced one, the compact and polycentric city model reinforces density, diversity and mobility at several focal points of an urban territory, while limiting the risks that an excessive concentration of activities in the city centre could generate (Dupont and Pumain 2000). The compact and polycentric city model is, therefore, appropriate for European post-industrial urban territories, which often have an urban structure with multiple centres (metropolitan areas for example) accompanied by a public transport network with varying degrees of efficiency.

The advantage of this model lies in the coordination between urbanization and mobility while increasing quality of life (satisfaction of sociocultural aspirations, diversity, optimal densification) and maintaining economic attractiveness (strengthening the economic fabric in urban areas) (Rey 2012). In other words, the polycentric restructuring of built territories can be seen as a form of optimisation of existing metropolitan areas based on their potential at the various interconnection points of their territory—namely, the neighbourhoods—to reinforce their inherent characteristics (density, diversity, mobility).

5.2.3 Neighbourhoods in Transition

Our framing of the concept of urban sustainability provides a vision for the evolution of European metropolitan areas and is the result of a convergence between two inputs. First, it is reflected in a transition dynamic, which concerns the connection of environment, society, economy to the governance of urban transformations. Second, it relies on the polycentric restructuring of built territories, including the management

of ecological resources, urban system decarbonation, and proactive anticipation of societal changes. In this regard, developments at the neighbourhood scale can be determinant tools to help build and support the transition towards urban sustainability. Urban brownfield regeneration projects perfectly embody these neighbourhoods in transition. In other words, a regeneration project is a neighbourhood in transition that turns urban brownfield potentials (Chap. 3) into strengths for sustainability.

5.3 The Neighbourhood Scale as a Means of Action for Cities

Between city and building, the neighbourhood scale offers a sample of the urban reality that is sufficiently broad to address sustainability criteria (see Fig. 5.2). It goes beyond the single building by including open spaces and urban networks, but is also targeted enough to consider concrete interventions within a reasonable timeframe (Rey 2011; Sharifi 2015; Hajer et al. 2020). In addition, the neighbourhood scale turns out to be the minimum operational level to consider the social dimension of urban sustainability (Berardi 2011). As a portion of a city, there is no official definition for the neighbourhood. We can consider it as a spatial unit that people can relate to, that is a coherent living environment where we work, live, and have shops and services (Talen 2019). The physical limit is not precisely defined because it will depend on the type of neighbourhood (density of housing, public spaces, diversity of building functions, identity) and any future interventions (Choguill 2008; Riera Pérez et al. 2018).

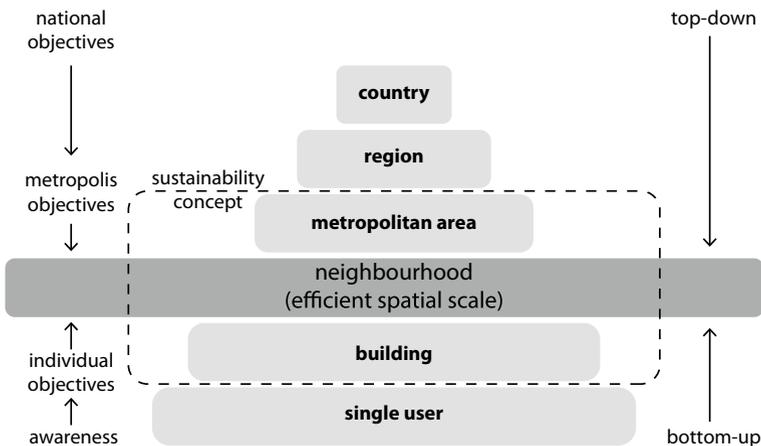


Fig. 5.2 The neighbourhood as an efficient spatial scale for the implementation of transition dynamics towards sustainability

From the urban densification perspective, the neighbourhood must embody an urban way of life, with dense, good quality and sustainable housing, in order to offer a credible alternative to the peri-urban single-family home. In this sense, the “sustainable neighbourhood” now appears to be the emblematic figure of the sustainable city in the making, as can be seen from the abundance of initiatives promoting this type of project (Machline et al. 2020; Hajer et al. 2020).³

Still, a sustainable neighbourhood is not a panacea, and faces multiple and complex challenges (see Chap. 8). In many cases, sustainable neighbourhoods are, within social, economic, and urban issues, used as an opportunity to work on the local image and identity of a city. Hence, through its—often mostly environmental (Tanguy et al. 2020)—performance, the sustainable neighbourhood contributes to extracting the site, and more generally the city, from a negative image towards an attractive, dynamic, and innovative one. This is particularly true for the sustainable neighbourhoods developed as a response to the presence of urban brownfields.

According to the definition elaborated in Chap. 2, urban brownfield regeneration projects concern areas of at least 5,000 m². Therefore, they are not limited to the construction or transformation of a single building, but most often correspond to the creation of a real neighbourhood. Hence, the thought processes that govern their development are situated on an intermediate scale between urban strategies and the architectural creation of buildings. They are part of the interlocking logic of planning activities that today covers the notion of “urban project”.

A meticulous regeneration of an urban brownfield is able to respond to the compact and polycentric city model while incorporating a transition dynamic towards sustainability. As such, the urban brownfield regeneration project embodies the neighbourhood in transition. Hence, urban brownfield regeneration projects are subject to issues similar to those that govern sustainable neighbourhood projects. If they are sometimes perceived as additional constraints, these issues can also turn into resources for the project (Rey 2014). They then become potential sources of creativity and inspiration for the architects or urban planners in charge.

No unilateral formula can be applied to the sustainable neighbourhood. Nevertheless, the next sections of this chapter will provide a detailed overview of the concept of sustainable neighbourhood by drawing up a non-exhaustive inventory of the main sustainability issues at the neighbourhood scale. It is indeed a question of reconciling a wide variety of parameters.

³ Highly publicized, the first eco-neighbourhoods such as the Vauban neighbourhood in Freiburg im Breisgau (DE), Bo01 in Malmö (SE), Hammarby Sjöstad in Stockholm (SE), BedZED in Beddington (UK), Eva-Lanxmeer in Culemborg (NL) or Ecoparc in Neuchâtel (CH) have often been considered from a technical-environmental perspective. These have inspired many other initiatives, but with generally more modest requirements.

5.4 Built Density, Functional Mix, and Sustainable Mobility

The creation of a sustainable neighbourhood falls within the coordination between urbanization and mobility, by structuring the transformation of the built environment with the development of public transport (encouraging “soft” or sustainable mobility) (Zhu and Leibowicz 2020) and by simultaneously breaking with the principle of dissociation of activities (encouraging a diversity of functions). Studies have shown that an attractive public transport offer requires a good perceived availability comparable to that of the private car as well as a perception of safety, highlighting information and comfort as main drivers (Steg 2003; Friman et al. 2020). According to expert opinions, the area served by public transport must meet a minimum built density corresponding to a floor area ratio (FAR) between 0.3 and 0.6 to be environmentally and economically sound (Gasser 2003). In urban areas, recent examples show that quality regeneration projects can be carried out with a clearly higher floor area ratio of the order of 1–2 (Lauring et al. 2010; Kurvinen and Saari 2020).

The compact and polycentric city model can be a relevant strategy to promote joint control of urbanization and mobility. Indeed, as previously described, this model is part of an evolution and optimisation logic based on the current situation of European urban territories. It follows the idea of an urban structure with multiple centres whose implementation appears both flexible and adapted to metropolitan areas. This urban development approach allows greater compactness within metropolises while limiting problems such as road congestion and air or noise pollution in the city centre caused by an excessive concentration of activities. It leads to the creation of “mixed and compact poles”, namely the strengthening and development of dense and multifunctional secondary sectors, which distribute the functions of the metropolis at public transport interconnection points.

At these strategic poles, the objective is therefore to create dense and mixed-use neighbourhoods with proximity to public transport stops to promote sustainable mobility. As detailed in Chap. 3, this objective coincides with the regeneration opportunity of urban brownfields, contributing concurrently to densify and revitalize existing built fabrics. The provision within the same neighbourhood of spaces devoted to housing, activities, and local services avoids creating monofunctional sectors, like bedroom communities or business districts, which are deserted at certain hours of the day or night (Merlin and Choay 2010). To link these different functions, special care must be taken to provide sustainable mobility networks throughout the neighbourhood (walking and cycling routes) and its connections with surrounding areas. Moreover, giving pedestrians more space increases the safety of all users (Wang and Yang 2019).

5.5 High Environmental Quality of Buildings and Developments

Among the various issues raised by the creation of a sustainable neighbourhood, environmental considerations—especially energy consumption—have been integrated primarily into the thought processes. This echoes the gradual emergence of collective ecological awareness since the 1970s. Within the context of climate change mitigation (UN and UNFCCC 2015), environmental considerations still play a central role in the architectural and urban concerns related to sustainable development. This is largely explained by the fact that building construction and exploitation remains a particularly energy-intensive sector. Even if there are large disparities in building performance across countries, buildings account for 41% of final energy consumption and 60% of electricity consumption in the EU-28. The average annual consumption for all types of buildings reaches around ~200 kWh/m². Two-thirds of this consumption is from residential buildings (Rousselot and Pollier 2018). Moreover, the construction sector accounts today for 36% of the European Union's GHG emissions (EU 2017).

In the face of such a challenge, a sustainable neighbourhood should be designed to reduce not only its energy consumption, but also that of all non-renewable resources (soil, water, biodiversity), as well as minimize its ecological footprint. A sustainable approach results in the adoption of bioclimatic architectural strategies and high-performance technological devices. The latter aim is, in particular, to reduce heating requirements (high thermal quality of the envelope, controlled air renewal in winter, promotion of passive solar gains and internal gains), reduce demand for electricity (natural light, solar protection, passive cooling, high-efficiency devices), and develop renewable energies (active solar, wood, geothermal, biomass) to cover the remaining needs. The use of environmentally friendly materials is another relevant strategy, by integrating ecological analysis (grey energy and pollutant emissions) into the early architectural design process of the buildings (Jusselme 2020). The aim is to limit the generation of waste during construction and to ecologically manage those that are unavoidable (sorting at source). Promoting circularity in building practices through the re-use of onsite materials is also an opportunity to be seized during brownfield regeneration projects (Fivet and Brütting 2020). Ultimately, both on the neighbourhood and building scale, the optimal management of water aims to reduce water consumption and maintain the natural regime of rainwater (recovery, infiltration, retention).

Life Cycle Analyses (LCA) of buildings, labelling processes, performance monitoring after commissioning and raising users' awareness of environmental considerations are also effective levers for action and an integral part of the sustainable neighbourhood process. We will address these topics in detail in Chap. 8.

5.6 Urban Contextualization and Preservation of Architectural Heritage

As previously mentioned, the creation of a sustainable neighbourhood is often taken as an opportunity to restructure a city and work, at the same time, on local image and identity. Unlike new neighbourhoods built in the outskirts on greenfields, neighbourhoods as brownfield regeneration projects confront an urban situation that is already strongly constructed. In order to promote the integration of the future neighbourhood into the existing surroundings, the project should consider the notions of built heritage and cultural identity from the outset.

Indeed, many urban brownfields, whether industrial, infrastructural, military, or other types, are home to buildings of significant historical interest (see Chaps. 2 and 3). Initially, their transformation involved the demolition of the existing infrastructure because the brownfield site was considered too negative, not to say too complex (see Chap. 4) (Lusso 2013). But an urban brownfield “also bears the interests, hopes, fears, and memories of the different actors related to each vacant site” (Trigo 2020). More often today, under the impetus emanating notably from civil society, brownfield regeneration into a sustainable neighbourhood implies enhancing the site via an emblematic architectural project (Berens 2011; ADI 2015).

Thus, strategies for recycling existing infrastructures are often prioritized (Berens 2011; Mieg and Oevermann 2014), while producing positive effects on surrounding property values (Van Duijn et al. 2014).⁴ This heritage dynamics, by which the society recognizes a site as worthy of conservation, contributes to improving the perception and image of the brownfield while reviving a specific history of the place (CABERNET 2004). Entering into interaction with existing structures, the regeneration project implies by definition taking a stand for that which deserves to be preserved, transformed, or replaced. Thus, in a prospective and dynamic vision, it is a question of considering the historical and morphological substance of the buildings and adapting them to contemporary needs. The example of the Emscher Valley in Germany described in Chap. 2 is particularly representative of that matter.

Often converted into spaces with a cultural vocation, culture becomes a tool for improving the conditions in given areas of cities and handling their new urban trajectories (Mecca and Lami 2020). These new places must continue to offer creative and fertile spaces while avoiding the pitfalls of “museumization” (Mieg and Oevermann 2014; Mecca and Lami 2020). Indeed, urban brownfields offer the possibility of new third places,⁵ particularly in neighbourhoods where culture, in its traditional form, is absent (Bertrand 2018). Whatever the quality of the buildings, urban brownfields are often temporary hosts of artists and associations with added social value who take advantage of inexpensive spaces offering flexible use. As discussed in Chap. 3, the regeneration of these places is, therefore, an opportunity to include a cultural component, which can be an integral part of the local economy and social life of

⁴ The counterpart may be new-built gentrification. See Sect. 5.9.

⁵ A third place is the social surroundings separate from the two usual social environments of home (first place) and the workplace (second place) (Oldenburg 1999).

sustainable neighbourhoods. The regeneration of the Belle de Mai brownfield in Marseille, France, is a particularly good example of this approach (see Chap. 2).

However, if culture and heritage can be levers for the transformation of a brownfield into a sustainable neighbourhood, a broader definition of these aspects invites a diversification of objectives in terms of social and programmatic mix and economic activities (Mckenzie and Hutton 2014). Our search for the optimal degree of intervention, depending on the specific project dynamics, involves a certain number of diagnoses, which are an integral part of the project evaluation. This will be dealt with in the second part of this book, entitled Project Dynamics and Support Tools.

5.7 Well-being and Conviviality Within the Neighbourhood

An argument often opposed to urban densification strategies is that they do not correspond to inhabitants' aspirations, whose ideal would be to live in a detached house in the countryside and move freely by car. If these aspirations symbolize a certain number of wishes and needs (privacy, property, proximity to natural spaces), some studies today put their scope into perspective. Residential preferences, which result from psychological, sociological, and financial considerations, are not limited to the peri-urban countryside. The suburban model—and resulting dependence on the automobile—are, therefore, not the result of a general aspiration (Vos et al. 2016; Jansen 2020). Whether urban or suburban, neighbourhood satisfaction can be defined as the extent to which the residential neighbourhood's needs are met (Lovejoy et al. 2010).

Earlier, we described the sustainable neighbourhood as the development of a dense and multifunctional secondary sector in coordination with public transport services. As this strategy increases the density of the already-built fabric, like with urban brownfield regeneration, it consequently implies improving the image of housing in urban areas. This densification with high added value—both for the inhabitants of the neighbourhood and for those of the whole metropolis—is taking even more importance in peri-urban territories, because it allows an alternative to the single-family home (Vos et al. 2016). Questions of quality of life and user comfort, therefore, occupy a central place in the process of designing built and non-built spaces.

Among the many qualitative parameters that can contribute to a neighbourhood's attractiveness and conviviality, the development of green spaces and quality public places is particularly important (Shaftoe 2012). The spaces allow the generation of a specific identity for each neighbourhood and promote exchanges and meetings amongst inhabitants. They accompany the integration of a diversified offer of local services (institutional spaces, cultural places, cafe-restaurants, small shops, game and leisure spaces), adapted in particular to the needs of families and older people (Reiter 2007; Gehl 2010). Being part of sustainable neighbourhood design processes, diverse degrees of participation and bottom-up planning approaches can help define the future-users' needs and promote their acceptance of the project. We will further develop this topic in Chap. 6.

5.8 Intergenerational and Social Diversity

The planning of framework conditions that favour intergenerational and social diversity is also, to a certain extent, part of a search for wellbeing and conviviality in the broad sense of the term. A rich and balanced neighbourhood life contributes to quality exchanges between inhabitants.

To encourage this diversity, a particular emphasis should be placed on mechanisms likely to promote intergenerational cohabitation as well as a social and cultural mix. We can cite, for example, the establishment of childcare facilities (crèches, after-school drop-in, extracurricular programmes), spaces specifically adapted for exchanges between users (community centres, cafes, meeting spaces, libraries, fab labs, repair cafés) or opportunities for leisure activities (cultural spaces, entertainment and creative workshops, community gardens, sports facilities).

The creation of a variety of types of housing, in terms of dimension, standards, and spatial typologies, also allows one to respond to a wider audience (students, single people, families, early retirees, elderly people, people with reduced mobility). Moreover, this varied offer opens up possibilities to explore different avenues of intermediate or semi-individual housing; the resulting density enables the reconciliation of a satisfactory appropriation of the neighbourhood and an attractive public transport offering.

Once the neighbourhood is completed, the existence of organizations allowing residents to get involved in neighbourhood life also tends to favour the identification of residents with their living environment and the harmonious coexistence between all neighbourhood users. Ultimately, the use-value will be a good indicator to judge, a posteriori, the success of the transition from urban brownfield to a sustainable neighbourhood. If the neighbourhood is lively throughout the day, the feeling of urbanity intensifies, offering a multitude of possible appropriations according to individual lifestyles.

5.9 Control of Global Costs

As urban areas account for the vast majority of the population and jobs, they are legitimately considered the main drivers of economic activity in most European countries (EU 2019). Hence, strategies to limit urban sprawl and develop sustainable mobility should be done while simultaneously aiming to strengthen the economic attractiveness of specific urban areas (Glaeser 2011). This urban densification—as an alternative to new constructions on the outskirts—can offer a favourable framework for diversification of economic activities in metropolises, which helps to maintain and create jobs in urban areas. In that sense, brownfield regeneration contributes to an image of economic dynamism, favourable to the strengthening and development of urban areas.

At this stage, it is important to remember that, on the whole, urban brownfields are characterised by good accessibility and a high centrality. Inventories carried out in several European countries show that most of the identified brownfields are located within metropolitan territories (see Chap. 3). In fact, at the time of their construction, industrial facilities were installed on the outskirts of cities to avoid any nuisance. Still, the choice of their location was carefully studied, i.e., close to traffic routes, particularly railways, to facilitate access to goods and users. Following the extension of urbanization, these sectors gradually found themselves integrated into the metropolitan area. In most cases, they have been able to preserve—or even reinforce—their advantageous accessibility conditions.

From the end of the 1990s, the literature wondered about the existence of certain behaviours, which tend to demonstrate that physical accessibility remains a real asset for places of life and work, despite the emergence of a society increasingly oriented towards information and communication technologies (Ascher 1995). “It is clear today that what is not communicable, digitizable, takes more and more value in economic life as in social life. Yet, never before the value of office real estate has depended that much on the quality of its location, its physical accessibility, and its economic and urban environment (Ascher 2001)”.

Years later, a central location still offers significant advantages in terms of access to job markets, various urban facilities, and services. It is increasingly sought after by companies, whose location strategies are based on trade-offs between proximity to transport hubs, land prices, and taxation (Pritchard and Frøyen 2019).⁶ For households, residential location refers to the same types of criteria, even if these choices are more complex. As we have seen before, trade-offs are of course made in terms of accessibility and price, but also according to possibilities or constraints and aspirations to certain residential models (single-family homes, townhouses, etc.).

As a result, due to their central and accessible location, new sustainable neighbourhoods on regenerated urban brownfields find themselves at the heart of a series of tensions. At the same time, places of concentration of flows and public spaces, these sectors can quickly become a city showcase, supposing a strong architectural, symbolic, and land valuation. However, the opportunity to revitalize a declining sector, both economically and socially, is also criticized for the phenomenon of “new-built gentrification” that it generates (Rérat et al. 2010), and gentrification in the neighbouring sectors (Schulze Bäing and Wong 2012). As previously discussed, without consideration for social diversity, these projects are often for the sole benefit of the upper social classes (Squires and Hutchison 2021). Because social problems are less apparent in brownfield regenerations than in the case of the urban renewal of degraded districts, their regeneration focuses more intensively on the dense and dynamic city (Andres and Bochet 2010).

Despite the obvious advantages linked to location attractiveness, the economic feasibility of a brownfield’s regeneration into a sustainable neighbourhood is risky due to the complexity of this type of operation (see Chap. 4). It involves controlling

⁶ However, the impact of the recent democratization of teleworking due to the COVID-19 pandemic on business property and the demand for office space is difficult to assess (CreditSuisse 2020).

overall costs over the long term, either by considering the construction or the operating phase. Poorly controlled costs tend to penalize the balance of the operation due to inefficiency, or even to unfortunately defer certain charges to the finances of public authorities.

The next chapter, which addresses the key steps of an urban brownfield regeneration process, will discuss questions of land management and the distribution of costs between owners. It will be an opportunity to elaborate on the participation of civil society not only in economic and social aspects, but also in environmental design considerations. Participation is an integral part of the governance of a neighbourhood in transition.

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